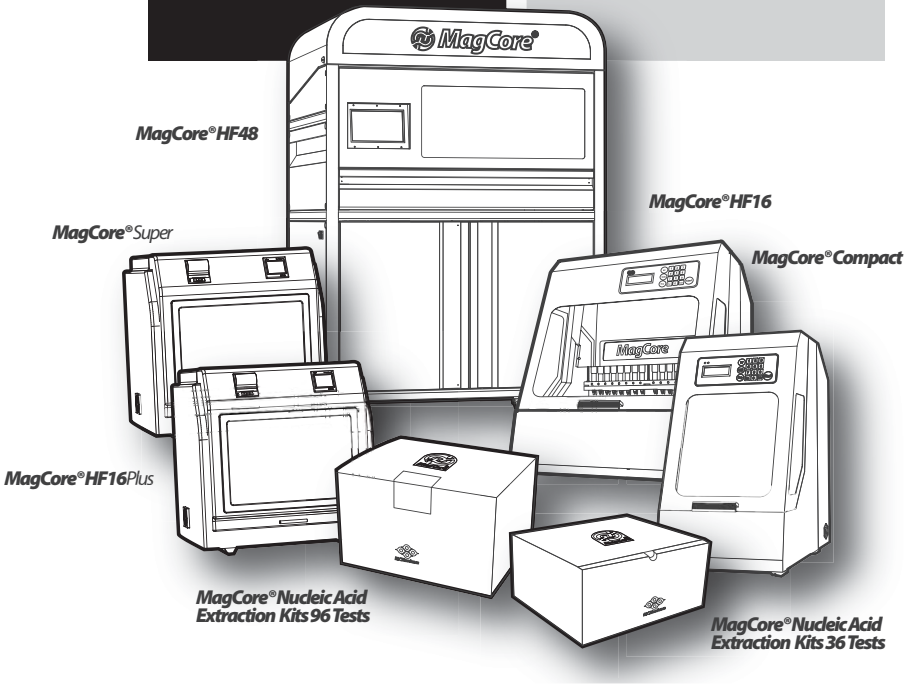
# MagCore®
# Nucleic Acid Extraction Kit
# User's Manual

**MagCore® Automated Nucleic Acid Extractor**

**MagCore® Nucleic Acid Extraction Kits**




RBC Bioscience Corp.
3F., No.132, Ln. 235, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, TAIWAN.
TEL : +886-2-8912-1200 FAX : +886-2-8912-1300

**Ver. 2014-1**
www.rbcbioscience.com

EC REP **Wellkang Ltd (www.CE-marking.eu)**
**29 Harley St. London W1G 9QR, UK**

CE IVD

RBCBioscience

*RBC Bioscience Corp.*
*3F, No.132, Lane 235, Baoqiao Rd, Xindian Dist,*
*New Taipei City 23145, Taiwan*
*TEL:+886-2-8912-1200 FAX:+886-2-8912-1300*
*http://www.rbcbioscience.com*

# MagCore®
# Nucleic Acid Extraction Kit
# User's Manual

## CONTENTS


**Precautions** ..... 1
**Product selection guide** ..... 2
**How to Use Kit** ..... 3
**Introduction of each MagCore® Nucleic Acid Extraction kits**
*Kit Contents, Description, Applications, Pretreatment, Protocol*

**MagCore® Genomic DNA Whole Blood Kit (Speedy installation)** ..... 5
**Cartridge Code 101** *Cat.No.MGB400-01 // MGB400-02*

**MagCore® Genomic DNA Whole Blood Kit** ..... 7
**Cartridge Code 102** *Cat.No.MGB400-03 // MGB400-04*

**MagCore® Genomic DNA Large Volume Whole Blood Kit** ..... 9
**Cartridge Code 104** *Cat.No.MGB1200*

**MagCore® Plasma DNA Extraction Kit (1.2 ml)** ..... 11
**Cartridge Code 105** *Cat.No.MPD1200*

**MagCore® Genomic DNA Whole Blood Kit (For Genotyping)** ..... 13
**Cartridge Code 106** *Cat.No.MGB400-07 // MGB400-08*

**MagCore® Cultured cells DNA Kit** ..... 15
**Cartridge Code 110** *Cat.No.MCC-01 // MCC-02*

**MagCore® Viral Nucleic Acid Extraction Kit** ..... 17
**Cartridge Code 201** *Cat.No.MVN400-01 // MVN400-02*

**MagCore® Viral Nucleic Acid Extraction Kit** ..... 19
**Cartridge Code 202** *Cat.No.MVN400-03 // MVN400-04*

**MagCore® Viral Nucleic Acid Large Volume Extraction Kit (2.4 ml)** ..... 21
**Cartridge Code 210** *Cat.No.MVN2400*

**MagCore® Viral Nucleic Acid Large Volume Extraction Kit (1.2 ml)** ..... 23
**Cartridge Code 211** *Cat.No.MVN1200*

**MagCore® Genomic DNA Plant Kit** ..... 25
**Cartridge Code 301** *Cat.No.MGP-01 // MGP-02*

**MagCore® Genomic DNA Tissue Kit** ..... 33
**Cartridge Code 401** *Cat.No.MGT-01 // MGT-02*

**MagCore® Genomic DNA FFPE One-Step Kit** ..... 35
**Cartridge Code 405** *MGF-01 // MGF-03*

**MagCore® Genomic DNA Bacterial Kit** ..... 39
**Cartridge Code 502** *Cat.No.MBB-01 // MBB-02*

**MagCore® Total RNA Whole Blood Kit** ..... 41
**Cartridge Code 601** *Cat.No.MRN-01 // MRN-02*

**MagCore® Total RNA Cultured Cells Kit** ..... 43
**Cartridge Code 610** *Cat.No.MRC-01 // MRC-02*

**Running Time List**

# Precautions

### I) Before Using

- *Do not operate MagCore® without qualified operation training.*
- *Read user's manual carefully before operation.*

### II) Handling Requirements

- *Do not use a kit after its expiration date.*
- *Do not touch the reagents with bare hands. Keep away from your skin, eyes, or mucous membranes. If contact does occur, wash the affected area immediately with large amounts of water. If you spill the reagents, dilute the spill with water before wiping it up.*
- *Do not allow reagents to mix with sodium hypochlorite solution or strong acids. This mixture can produce a highly toxic gas.*

### III) Laboratory Procedures

- *Handle all samples and the resulting waste as if potentially infectious, using safe laboratory procedures. As the sensitivity and titer of potential pathogens in the sample material varies, the operator has to optimize pathogen inactivation by the Lysis Buffer or take appropriate measures according to local safety regulations. RBC Bioscience does not warrant that samples treated with Lysis Buffer are completely inactivated and noninfectious. After sample processing is completed, remove and autoclave all disposable plastics.*
- *Do not eat, drink or smoke in the laboratory working area.*
- *Wear protective disposable gloves, laboratory coats and goggles when handling samples and kit reagents.*
- *Do not use sharp or pointed objects when working with the reagent cartridges, this is to prevent damage of the sealing foil and loss of reagent.*
- *Do not contaminate the reagents with bacteria, virus, or ribonuclease. Use disposable pipettes and RNase-free pipette tips only to remove aliquots from reagent bottles. Use the general precautions described in the literature.*
- *Wash hands thoroughly after handling samples and test reagents.*

### IV) Waste Handling

- *Discard unused reagents and waste complied with country, federal, state and local regulations.*



# Product selection guide

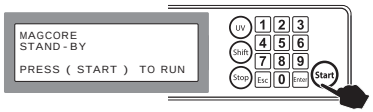
| MagCore® Nucleic Acid Extraction Kits: | Cat No. 36 preps | Cat No. 72 preps | Cat No. 96 preps | Whole blood | Buffy Coat | Human Serum | Cell-free body fluids | Urine | Free-circulating DNA | Animal cells | Animal Tissue | Plant Tissue | Bacteria-Spurium | swab | FFPE | Stool | Forensic-specimens |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 MagCore® Genomic DNA Whole Blood Kit (Speedy installation) | MGB400-01 | | MGB400-02 | ✓ | | | | | | | | | | | | | |
| 102 MagCore® Genomic DNA Whole Blood Kit | MGB400-03 | | MGB400-04 | ✓ | | | | | | | | | | | | | |
| 104 MagCore® Genomic DNA Large Volume Whole Blood Kit (1.2 ml) | | | MGB1200 | ✓ | | | | | | | | | | | | | |
| 105 MagCore® Plasma DNA Extraction Kit (1.2 ml) | | | MPD1200 | | | ✓ | ✓ | ✓ | | | | | | | | | |
| 106 MagCore® Genomic DNA Whole Blood Kit (For Genotyping) | MGB400-07 | | MGB400-08 | ✓ | | | | | | | | | | | | | |
| 110 MagCore® Cultured Cells DNA Kit | MCC-01 | | MCC-02 | | | | | | ✓ | | | | | | | | |
| 301 MagCore® Genomic DNA Plant Kit | MGP-01 | | MGP-02 | | | | | | | ✓ | | | | | | | |
| 401 MagCore® Genomic DNA Tissue Kit | MGT-01 | | MGT-02 | | | | | | | | ✓ | | | ✓ | ✓ | | |
| 405 MagCore® Genomic DNA FFPE One-Step Kit | MGF-01 | MGF-03 | | | | | | | | | | ✓ | | ✓ | | | |
| 502 MagCore® Genomic DNA Bacterial Kit | MBB-01 | | MBB-02 | | | | | | | | | | ✓ | | | | |
| 201 MagCore® Viral Nucleic Acid Extraction Kit | MVN400-01 | | MVN400-02 | | ✓ | ✓ | | | | | | | | | | | |
| 202 MagCore® Viral Nucleic Acid Extraction Kit (Low PCR Inhibition) | MVN400-03 | | MVN400-04 | | ✓ | ✓ | | | | | | | | | | | |
| 210 MagCore® Viral Nucleic Acid Large Volume Extraction Kit (2.4 ml) | | | MVN2400 | | ✓ | ✓ | | | | | | | | | | | |
| 211 MagCore® Viral Nucleic Acid Large Volume Extraction Kit (1.2 ml) | | | MVN1200 | | ✓ | ✓ | | | | | | | | | | | |
| 601 MagCore® Total RNA Whole Blood Kit | MRN-01 | | MRN-02 | ✓ | | | | | | | | | | | | | |
| 610 MagCore® Total RNA Cultured Cells Kit | MRC-01 | | MRC-02 | | | | | | | | | | | | | * | * |

Genomic DNA | Viral Nucleic Acids | Total RNA

* *For isolation of total RNA from animal tissues and FFPE samples, the MagCore total RNA Cultured Cells Kit is a relatively suitable choice and functions with a special protocol. In the near future, a more unique and convenient reagent will be developed for the extraction of RNA from animal tissue and FFPE samples.*

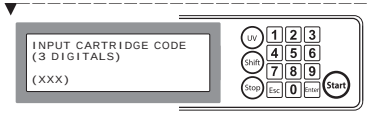
# How to use kit - MagCore®HF16 and Compact

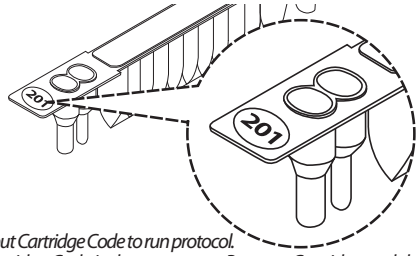
*Install all necessary accessories and apply your specimen to MagCore®.*




*Press START.*

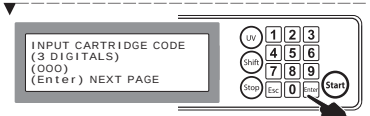
*After press Start button, machine runs program of calibration, initialize to move all axis to original factory positions.*



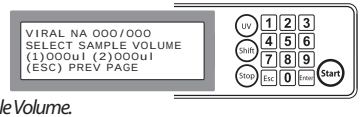




*Input Cartridge Code to run protocol.*
*Cartridge Code is shown on your Reagent Cartridge and the cover of user manual.*

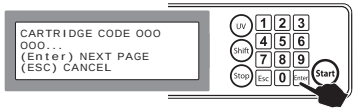
*Above CODE is for demonstration purpose, please refer to the kit you purchase for proper program CODE.*



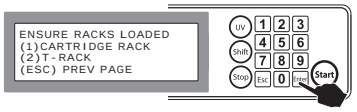

*Confirm your input code again and press Enter to next page for sample volume selection.*



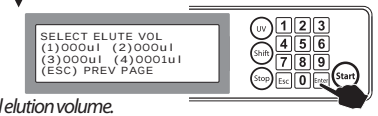

*Select Sample Volume.*



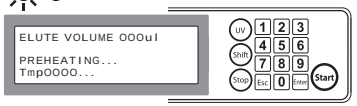

*Confirm your input Sample Volume.*
*Press Enter for next page, Press ESC for back to Stand-By page.*




*At this step prepare racks to operation area.*
*After racks loaded then press Enter to next page for elution volume selection.*




*Select final elution volume.*

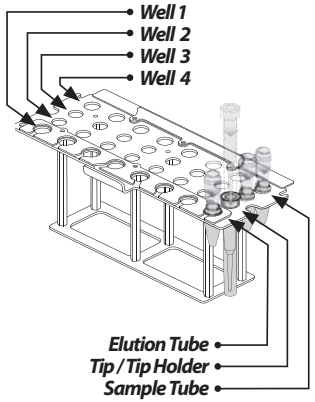



*MagCore® in process of selected protocol at this step. The Green Indicate LED lights up and Heating Block starts to heat up to 65°C for Lysis Step.*

*While MagCore® is under program running, the "MagCore" LCD lights up at all times.*
*DO NOT open the door at this moment, it causes emergent stop and you might lose your samples by machine interruption.*

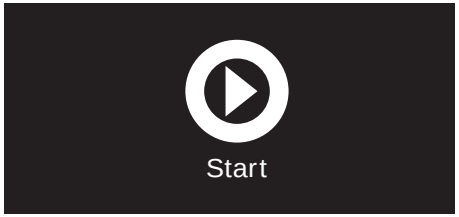
*While program finished, a beep sound can be heard and Green Indicate LED light went out.*

## Well Position of T-Rack





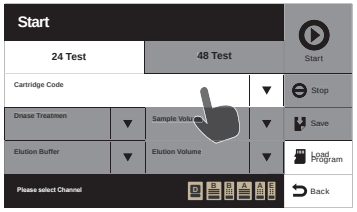

# How to use kit - MagCore®HF48



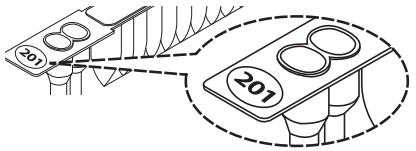

*Press Start key in the main functional window.*

▼ Next Step

*Select 24 or 48 test channels.*




*Select Cartridge number.*
*Cartridge number is marked on the Cartridge you use.*

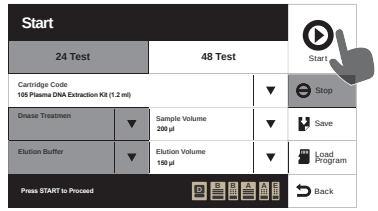



*Please reconfirm the number you selected and select all parameters.*

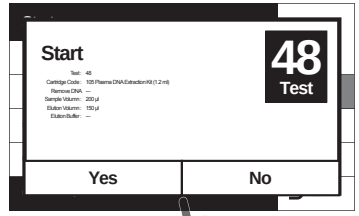
▼ Next Step

*Confirm that the icon in the status bar is in normal status. If the icon shows , the Start key will be at "inactive" status and the operation is disabled. Please follow the display portion to remove error to solve. (Refer to page 8 for warning marks)*

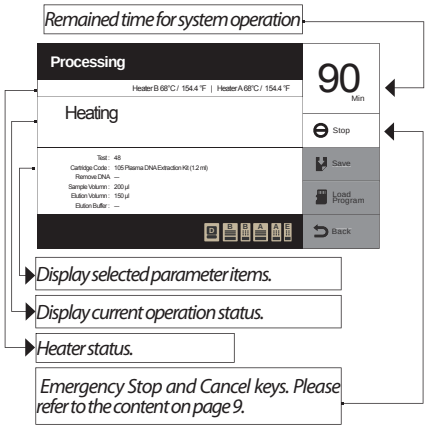
▼ Next Step




*When you finish input and press Start key, the system will show a confirmation window, on which there are the parameters you input. Please press Yes to operate the system if the parameters are not incorrect. Please press No to modify incorrect parameters if you want to modify.*




▼ Next Step




*You may watch the procedure status and remained time of the current operation on the control panel. The system will display Complete page after completion.*

It is recommended not to open the viewing window or feeding door to prevent from poor extraction result in system operation if there is no emergency.

# *MagCore® Genomic DNA Whole Blood Kit* (Speedy installation)

***For purification of genomic DNA from human whole blood***

## *Cartridge Code 101*

*Cat.No.MGB400-01 // MGB400-02*

## *Kit Contents*

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MGB400-01 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *36 pcs.* |
| *Pipet Tip plus Holder Set* | *36 sets.* |
| *Sample Tube* | *36 pcs.* |
| *Elution Tube* | *36 pcs.* |

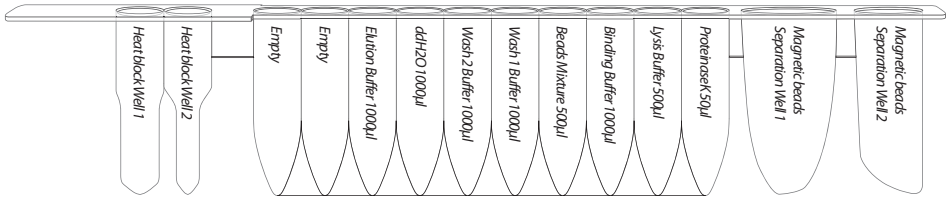
***Cat.No. MGB400-02 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *96 pcs.* |
| *Pipet Tip plus Holder Set* | *100 sets.* |
| *Sample Tube* | *100 pcs.* |
| *Elution Tube* | *100 pcs.* |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Shelf life 6 months.*

***Cartrige Contents :***




## *Description*

*MagCore® Genomic DNA Whole Blood Kit is designed for purification of total DNA (including genomic, mitochondrial and viral DNA) from whole blood, plasma, serum, buffy coat by using MagCore® auto-extraction instrument. The method uses pre-filled cartridge contains proteinase K and chaotropic salt to lysis cells and degrade protein.*

*DNA will bind to cellulose coated magnetic beads. After washing off the contaminants, the purified DNA is eluted by low salt elution buffer. Purified DNA of approximately 20-30 kb in length is suitable for PCR or other enzymatic reactions.*

## *Applications*

*Using magnetic-particle technology to purify genomic DNA from fresh whole blood. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting... etc.*





## *Running Time: **44 min** (sample volume:200 µl) // **57 min** (sample volume:400 µl)*

### *Whole Blood Protocol*

1. *Pipet 200/400µl of equilibrated whole blood sample to MagCore Sample Tube.*
2. *Put the prepared Sample Tube into well 4 of T-Rack.*
3. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
4. *Run Code.101 program at MagCore®.*

***Optional Step: RNA Degradation***

*If RNA-Free genomic DNA is required, perform these optional steps.*

1. *Add 4µl RNase A(50mg/ml) into the sample lysate.*
2. *Incubate the sample at room temperature for 20min.*

### *Buffy Coat modify Protocol*

#### *RBC Lysis Buffer:*

*150 mM $NH_4Cl$, 10mM $KHCO_3$, 0.1mM EDTA.*

#### *Buffy Coat Preparation by RBC Lysis*

1. *Take 600 ~ 700µl whole blood into 2ml microcentrifuge tube.*

*Don't take more than 700µl whole blood sample; it will cause the leakage situation during process.*

2. *Add 1ml RBC Lysis Buffer and mix the buffer and whole blood sample by upside down.*
3. *Shake the mixture, 100rpm 5mins.*
4. *Centrifuge the mixture 13,000rpm 1 min.*
5. *Discard supernatant.*
6. *Repeat step 2 ~ step 5 to wash the sample again.*
7. *Add 400µl RBC Lysis Buffer and 20µl proteinase K to resuspend the pellet and transfer into MagCore Sample Tube.*
8. *Put the prepared Sample Tube into well 4 of T-Rack.*
9. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
10. *Run Code.101 program at MagCore®.*

#### *Buffy Coat Preparation by Centrifugation*

1. *Take 2 ~ 5ml whole blood sample and centrifuge at 1,500rpm 10mins.*
2. *Use plastic drop to take white buffy coat layer in the middle of whole blood sample.*
3. *Move the buffy coat into new microcentrifuge tube.*
4. *Take 80 ~ 100µl buffy coat sample into MagCore Sample Tube and add RBC Lysis Buffer or PBS until 400µl, then add 20µl of proteinase K.*
5. *Put the prepared Sample Tube into well 4 of T-Rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code.101 program at MagCore®.*

***Note : We suggest to select 150 ~200µl elution buffer, it can get better elution efficiency in both of these methods. Normally the concentration is higher than 150ng/µl under such elution volume.***

# MagCore® Genomic DNA Whole Blood Kit

***For purification of genomic DNA from human whole blood***

## Cartridge Code 102

*Cat.No.MGB400-03 // MGB-400-04*

## Kit Contents

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MGB400-03 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *36 pcs.* |
| *Pipet Tip plus Holder Set* | *36 sets.* |
| *Sample Tube* | *36 pcs.* |
| *Elution Tube* | *36 pcs.* |
| *Proteinase K(11mg)* | *2 pcs.* |
| *PK Storage Buffer* | *2 pcs.* |

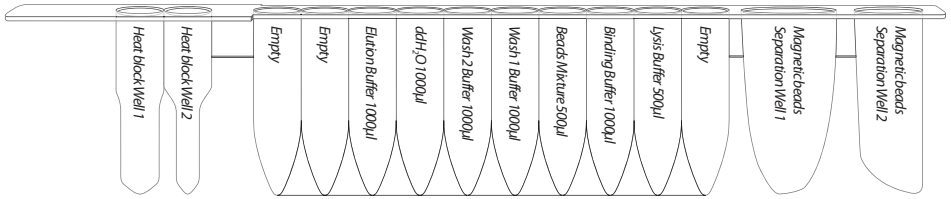
***Cat.No. MGB400-04 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *96 pcs.* |
| *Pipet Tip plus Holder Set* | *100 sets.* |
| *Sample Tube* | *100 pcs.* |
| *Elution Tube* | *100 pcs.* |
| *Proteinase K(11mg)* | *4 pcs.* |
| *PK Storage Buffer* | *4 pcs.* |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*3. Shelf life 12 months.*

***Cartridge Contents :***




## Description

*MagCore® Genomic DNA Whole Blood Kit is designed for purification of total DNA (including genomic, mitochondrial and viral DNA) from whole blood, plasma, serum, buffy coat by using MagCore® auto-extraction instrument. The method uses pre-filled cartridge contains chaotropic salt to lysis cells and degrade protein. DNA will bind to cellulose coated magnetic beads. After washing off the contaminants, the purified DNA is eluted by low salt elution buffer. Purified DNA of approximately 20-30 kb in length is suitable for PCR or other enzymatic reactions.*

## Applications

*Using magnetic-particle technology to purify genomic DNA from fresh whole blood. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting... etc.*





***Running Time:*** ***44 min****(sample volume :200 µl) //* ***57 min****(sample volume :400 µl)*

### Preparation before using

1. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### Whole Blood Protocol

1. *Take a new Sample Tube and add 20µl of Proteinase K (10mg/ml) to 200µl of equilibrated whole blood sample. (40µl Proteinase K to 400µl whole blood).*
2. *Place the prepared Sample Tube into well 4 of T-Rack.*
3. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
4. *Run Code.102 program at MagCore®.*

***Optional Step: RNA Degradation***

*If RNA-Free genomic DNA is required, perform these optional steps before adding Proteinase K.*

1. *Add 4µl RNase A(50mg/ml) into the sample lysate.*
2. *Incubate the sample at room temperature for 20min*

### Buffy Coat modify Protocol

#### RBC Lysis Buffer:

*150mM $NH_4Cl$, 10mM $KHCO_3$, 0.1mM EDTA.*

#### Buffy Coat Preparation by RBC Lysis

1. *Take 600 ~ 700µl whole blood into 2ml microcentrifuge tube.*

*Don't take more than 700µl whole blood sample; it will cause the leakage situation during process.*

2. *Add 1ml RBC Lysis Buffer and mix the buffer and whole blood sample by upside down.*
3. *Shake the mixture, 100rpm 5mins.*
4. *Centrifuge the mixture 13,000rpm 1 min.*
5. *Discard supernatant.*
6. *Repeat step 2 ~ step 5 to wash the sample again.*
7. *Add 400µl RBC Lysis Buffer and 20µl proteinase K to resuspend the pellet and transfer into MagCore Sample Tube.*
8. *Place the prepared Sample Tube into well 4 of T-Rack.*
9. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
10. *Run Code.102 program at MagCore®.*

#### Buffy Coat Preparation by Centrifugation

1. *Take 2 ~ 5ml whole blood sample and centrifuge at 1,500rpm 10mins.*
2. *Use plastic drop to take white buffy coat layer in the middle of whole blood sample.*
3. *Move the buffy coat into new microcentrifuge tube.*
4. *Take 80 ~ 100µl buffy coat sample into MagCore Sample Tube and add RBC Lysis Buffer or PBS until 400µl then add 20µl of proteinase K.*
5. *Place the prepared Sample Tube into well 4 of T-Rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code.102 program at MagCore®.*

***Note : We suggest to select 150 ~200µl elution buffer, it can get better elution efficiency in both of these methods. Normally the concentration is higher than 150ng/µl under such elution volume.***

# *MagCore® Genomic DNA Large Volume Whole Blood Kit*

***For purification of genomic DNA from human whole blood (1.2 ml)***

## *Cartridge Code 104*

*Cat.No.MGB1200*

## *Kit Contents*

***Check that the following parts are included in addition to the main unit:***

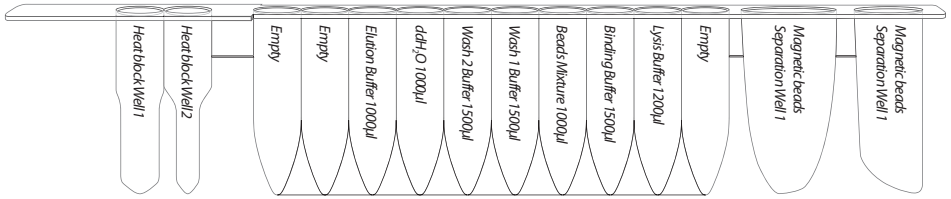
***Cat.No. MGB1200 Contents:***

*Pre-filled Cartridge Reagent.....96 pcs.*
*Pipet Tip plus Holder Set.....100 sets.*
*Sample Tube.....100 pcs.*
*Elution Tube.....100 pcs.*
*Proteinase K(11mg).....8 pcs.*
*PK Storage Buffer.....8 pcs.*

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*3. Shelf life 12 months.*

***Cartridge Contents :***




## *Description*

*MagCore® Genomic DNA Large Volume Whole Blood kit is designed to extract genomic DNA from 1.2ml fresh whole blood via MagCore® auto-extraction instrument. The kit contains all required reagent and labware for automated purification using magnetic-particle technology. Easy select program code number 104 in MagCore® and combine using MagCore® Genomic DNA Large Volume Whole Blood Kit can extract high quality genomic DNA.*

## *Applications*

*Using magnetic-particle technology to purify genomic DNA from 1.2ml fresh whole blood. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting... etc.*





## *Running Time: 76 min (sample volume :1200 µl)*

### *Preparation before using*

1. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### *Protocol*

1. *Pipet Proteinase K 80 µl into the MagCore Sample Tubes.*
2. *Add 1200 µl whole blood into the prepared Sample Tube.*
3. *Place the prepared Sample Tube into well 4 of T-rack.*
4. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
5. *Run Code.104 program at MagCore®.*

***Note : Beads or precipitate in eluent might be happened in viscous samples. This situation will not affect the yield, purity and downstream applications. Reduce volume of viscous sample or simply centrifuge will remove the residual beads.***

# *MagCore® Plasma DNA Extraction Kit (1.2 ml)*

***For extraction of free circulating DNA from human plasma or serum.***

## *Cartridge Code 105*

*Cat.No.MPD1200*

## *Kit Contents*

***Check that the following parts are included in addition to the main unit:***

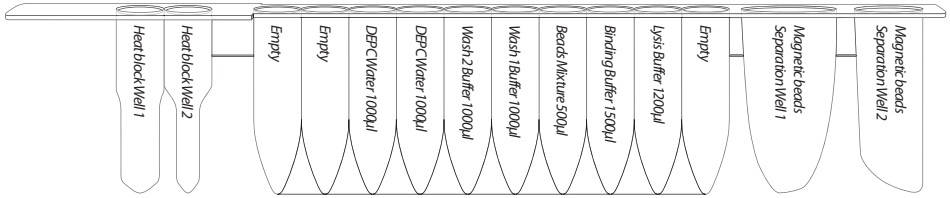
***Cat.No. MPD1200 Contents:***

*Pre-filled Cartridge Reagent.....96 pcs.*
*Pipet Tip plus Holder Set.....100 sets.*
*Sample Tube.....100 pcs.*
*Elution Tube.....100 pcs.*
*Proteinase K(11mg).....2 pcs.*
*PK Storage Buffer.....2 pcs.*

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*3. Shelf life 12 months.*

***Cartridge Contents :***




## *Description*

*MagCore® Plasma DNA Extraction Kit is designed for purification of DNA from 1.2 ml of serum, plasma, cell-free body fluids by using MagCore® auto-extraction instrument. With all the kit components of plastic consumables are DNase/ RNase -Free pretreated, and individual processing track for each loaded samples, this system eliminates all possible cross contamination between samples. Built-in protocol with flexibility in sample source volumes, plasma DNA can be extracted using this kit in a fast and economical way.*

## *Applications*

*The purified total nucleic acid is suitable for highly sensitive and quantitative PCR. MagCore Plasma DNA Extraction Kit has been proven with various genomic analyses as downstream applications.*

## *Running Time: 76 min* *(sample volume: 1200µl)*

### *Preparation before using*

1. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### *Protocol*

1. *Pipet 20 µl proteinase K(10mg/ml) into the MagCore Sample Tubes.*
2. *Add 1200µl of serum, plasma, cell-free body fluids into the prepared Sample Tube.*
3. *Place the prepared Sample Tube into well 4 of T-rack.*
4. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
5. *Run Code.105 program at MagCore®.*

# MagCore® Genomic DNA Whole Blood Kit (For Genotyping)

***Purify genomic DNA from human whole blood for genotyping.***

## Cartridge Code 106

*Cat.No.MGB400-07 // MGB-400-08*

## Kit Contents

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MGB400-07 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *36 pcs.* |
| *Pipet Tip plus Holder Set* | *36 sets.* |
| *Sample Tube* | *36 pcs.* |
| *Elution Tube* | *36 pcs.* |
| *Proteinase K(11mg)* | *2 pcs.* |
| *PK Storage Buffer* | *2 pcs.* |

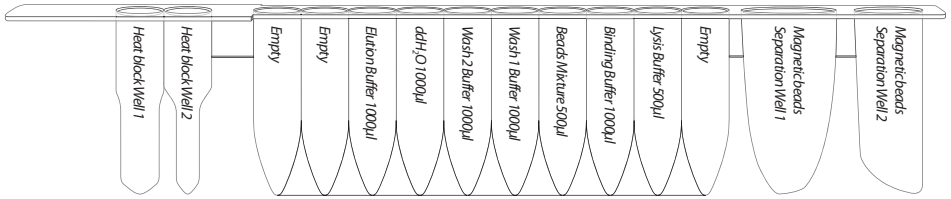
***Cat.No. MGB400-08 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *96 pcs.* |
| *Pipet Tip plus Holder Set* | *100 sets.* |
| *Sample Tube* | *100 pcs.* |
| *Elution Tube* | *100 pcs.* |
| *Proteinase K(11mg)* | *4 pcs.* |
| *PK Storage Buffer* | *4 pcs.* |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*3. Shelf life 12 months.*

***Cartridge Contents :***




## Description

*This kit is designed for genotyping application, you can get completed gDNA from eluent. We modify the reagent components and machine operation to make kit more suitable for genotyping. The pre-filled cartridge contains chaotropic salt and guanidine hydrochloride for cell lysis and protein degradation. The chaotropic salt helps the strong binding of DNA and cellulose coated magnetic beads . After the removal of contaminants, the high quality DNA is eluted by low salt elution buffer or water. Purified DNA of approximately 20-30 kb in length is suitable for genotyping or other applications.*

## Applications

*Use magnetic-particle technology to purify genomic DNA from whole blood and buffy coat. The purified genomic DNA can be directly used for downstream application such as genotyping, PCR, real-time PCR, restriction enzyme digestion, southern blotting…etc.*





***Running Time:*** ***44 min****(sample volume :200 µl) //* ***57 min****(sample volume :400 µl)*

### Preparation before using

1. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### Whole Blood Protocol

1. *Take a new Sample Tube and add 20µl of Proteinase K (10mg/ml) to 200µl of equilibrated whole blood sample. (40µl Proteinase K to 400µl whole blood).*
2. *Place the prepared Sample Tube into well 4 of T-Rack.*
3. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
4. *Run Code.106 program at MagCore®.*

***Optional Step: RNA Degradation***

*If RNA-Free genomic DNA is required, perform these optional steps before adding Proteinase K.*

1. *Add 4µl RNase A(50mg/ml) into the sample lysate.*
2. *Incubate the sample at room temperature for 20min*

### Buffy Coat modify Protocol

#### RBC Lysis Buffer:

*150mM $NH_4Cl$, 10mM $KHCO_3$, 0.1mM EDTA.*

#### Buffy Coat Preparation by RBC Lysis

1. *Take 600 ~ 700µl whole blood into 2ml microcentrifuge tube.*

*Don't take more than 700µl whole blood sample; it will cause the leakage situation during process.*

2. *Add 1ml RBC Lysis Buffer and mix the buffer and whole blood sample by upside down.*
3. *Shake the mixture, 100rpm 5mins.*
4. *Centrifuge the mixture 13,000rpm 1 min.*
5. *Discard supernatant.*
6. *Repeat step 2 ~ step 5 to wash the sample again.*
7. *Add 400µl RBC Lysis Buffer and 20µl proteinase K to resuspend the pellet and transfer into MagCore Sample Tube.*
8. *Place the prepared Sample Tube into well 4 of T-Rack.*
9. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
10. *Run Code.106 program at MagCore®.*

#### Buffy Coat Preparation by Centrifugation

1. *Take 2 ~ 5ml whole blood sample and centrifuge at 1,500rpm 10mins.*
2. *Use plastic drop to take white buffy coat layer in the middle of whole blood sample.*
3. *Move the buffy coat into new microcentrifuge tube.*
4. *Take 80 ~ 100µl buffy coat sample into MagCore Sample Tube and add RBC Lysis Buffer or PBS until 400µl then add 20µl of proteinase K.*
5. *Place the prepared Sample Tube into well 4 of T-Rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code.106 program at MagCore®.*

***Note : We suggest to select 150 ~200µl elution buffer, it can get better elution efficiency in both of these methods. Normally the concentration is higher than 150ng/µl under such elution volume.***

# MagCore® Cultured Cells DNA Kit

**For extraction of genomic DNA from cultured cells and amniotic fluid.**

## Cartridge Code 110

Cat.No.MCC-01 // MCC-02

## Kit Contents

**Check that the following parts are included in addition to the main unit:**

**Cat.No. MCC-01 Contents:**

| | |
|---|---|
| Pre-filled Cartridge Reagent | 36 pcs. |
| Pipet Tip plus Holder Set | 36 sets. |
| Sample Tube | 36 pcs. |
| Elution Tube | 36 pcs. |
| Proteinase K(11mg) | 1 pcs. |
| PK Storage Buffer | 1 pcs. |

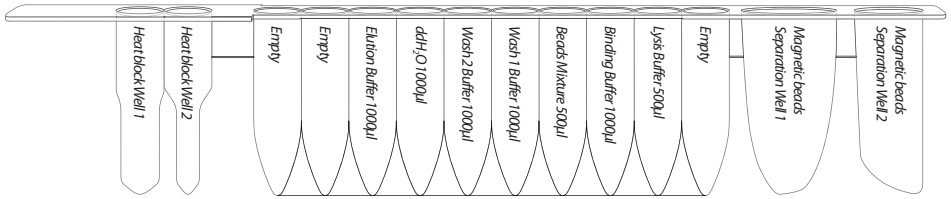
**Cat.No. MCC-02 Contents:**

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| Proteinase K(11mg) | 2 pcs. |
| PK Storage Buffer | 2 pcs. |

**Storage and Stability :**

1. This kit should be stored at room temperature.
2. Proteinase K should be stored at -20℃ when mixing with PK Storage Buffer.
3. Shelf life 12 months.

**Cartrige Contents :**




## Description

MagCore® Cultured cells DNA Kit is designed to extract genomic DNA from up to 5x10$^6$ cultured cells via MagCore® auto-extraction instrument. The kit contains all required reagent and labware for automated purification using magnetic-particle technology. Easy select program code number 110 in MagCore® and combine using MagCore® Cultured cells DNA Kit can extract high quality genomic DNA.

## Applications

Using magnetic-particle technology to purify genomic DNA from 5x10$^6$ cultured cells. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting... etc.





## Running Time: 44 min (sample volume: 200 µl, up to 5 x 10$^6$ cells)

### Preparation before using

1. Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20℃.
2. Ensure PBS buffer have been prepared for resuspend cell pellet.

### Protocol

#### Sample Preparation

**A. Cells grown in suspension**

Cells grown in suspension(up to 5 x 10$^6$ cells). Determine the number of cells. Centrifuge the appropriate number of cells for 5 min. at 300 x g in a 1.5 ml microcentrifuge tube (not provided). Remove the supernatant completely and discard, Continue with MagCore® Operation step 1.

**B. Cells grown in a monolayer**

Cells grown in a monolayer(up to 5 x 10$^6$ cells). Cells grown in a monolayer can be detached from the culture flask by either trypsinization or using a cell scraper.

**To trypsinize cells:**

Determine the number of cells. Aspirate the medium and wash cells with PBS (not provided). Aspirate the PBS, and add 0.10–0.25% trypsin. After cells have detached from the dish or flask, collect them in medium, and transfer the appropriate number of cells(up to 5 x 10$^6$ cells) to a 1.5 ml microcentrifuge tube (not provided). Centrifuge for 5 min. at 300 x g. Remove the supernatant completely and discard, taking care not to disturb the cell pellet. Continue with MagCore® Operation step 1.

**Using a cell scraper:**

Detach cells from the dish or flask. Transfer the appropriate number of cells(up to 5 x 10$^6$ cells) to a 1.5 ml microcentrifuge tube and centrifuge for 5 min. at 300 x g. Remove the supernatant completely and discard, taking care not to disturb the cell pellet. Continue with MagCore® Operation step 1.

#### MagCore® Operation

1. Resuspend cell pellet with PBS Buffer to a final volume of 200 µl.
2. Transfer cell mixture 200 µl and add 20 µl Proteinase K into the MagCore Sample Tubes.
3. Place the prepared Sample Tube into well 4 of T-rack.
4. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
5. Run Code.110 program at MagCore®.

### Amniotic Fluid Protocol

Sample preparation

1. Harvest cells from 10~15 ml amniotic fluid of 16~18 weeks by centrifugation for 10 minutes at 3000 rpm and discard the supernatant.
2. Add 200µl GT Buffer (not provided) to the tube and resuspend the cell pellet, then transfer mixture to new microcentrifuge tube.
3. Add 5~10µl ProteinaseK (10mg/ml) to the sample. Vortex for 5 seconds to mix sample.
4. Incubate at 56℃ for 10 minutes until the sample lysate is clear. During incubation, invert the tube every 3 minutes.
5. Spin down the sample and apply for MagCore® HF16.

# MagCore® Viral Nucleic Acid Extraction Kit

***For extraction of viral DNA/RNA from serum, plasma and cell-free body fluids.***

## Cartridge Code 201

*Cat.No.MVN400-01 // MVN-400-02*

## Kit Contents

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MVN400-01 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 36 pcs. |
| Pipet Tip plus Holder Set | 36 sets. |
| Sample Tube | 36 pcs. |
| Elution Tube | 36 pcs. |
| Carrier RNA(1mg) | 1 pcs. |
| RNase Free Water | 1 pcs. |
| Proteinase K(11mg) | 1 pcs. |
| PK Storage Buffer | 1 pcs. |

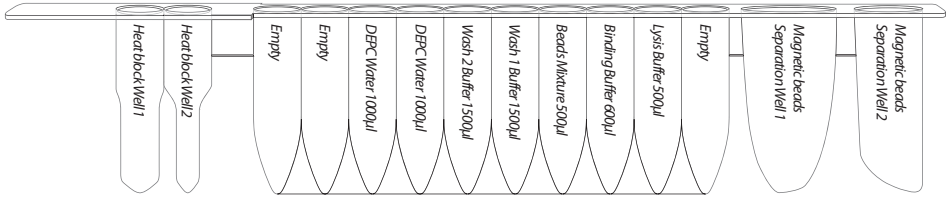
***Cat.No. MVN400-02 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| Carrier RNA(1mg) | 1 pcs. |
| RNase Free Water | 1 pcs. |
| Proteinase K(11mg) | 2 pcs. |
| PK Storage Buffer | 2 pcs. |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Carrier RNA should be stored at -20°C when mixing with RNase Free Water.*
*3. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*4. Shelf life 12 months.*

***Cartridge Contents :***




## Description

*MagCore® Viral Nucleic Acid Extraction kit is designed to extract viral DNA and RNA via MagCore® auto-extraction instrument. With all the kit components of plastic consumables are DNase/RNase-Free pretreated, and individual processing track for each loaded samples, this system eliminates all possible cross contamination between samples. Built-in protocol with flexibility in sample source volumes, both DNA and RNA virus can be extracted using the same kit in a fast and economical way.*

## Applications

*Using magnetic-particle technology to purify viral nucleic acid from serum, plasma, or cell-free body fluids. The purified viral nucleic acid is suitable for highly sensitive and quantitative PCR. MagCore Viral Nucleic Acid Extraction Kit has been proven with HBV, HCV, HIV and influenza viruses for downstream applications.*





***Running Time:*** ***45 min*** *(sample volume :200 µl) //* ***56 min*** *(sample volume :400 µl)*

### Preparation before using

1. *Add 1.0 ml RNase Free Water to the Carrier RNA tube and mix by vortexing. Store prepared Carrier RNA (1mg/ml) at -20°C.*
2. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### Protocol

1. *Pipet 10 µl Carrier RNA(1mg/ml) and 20 µl proteinase K(10mg/ml) into the MagCore Sample Tubes.*
2. *Add 200 µl or 400 µl of serum, plasma, or cell-free body fluids into the prepared Sample Tube.*
3. *Place the prepared Sample Tube into well 4 of T-rack.*
4. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
5. *Run Code.201 program at MagCore®.*

### Urine Protocol

*Sample preparation*

1. *Harvest cells from up to 3.5 ml urine by centrifugation for 10 minutes at 3000 rpm and concentrate the sample to 400 ul*
2. *Add 5~10 ul ProteinaseK (10mg/ml) to the sample. Vortex for 5 seconds to mix sample.*
3. *Incubate at 56°C for 10 minutes until the sample lysate is clear. During incubation, invert the tube every 3 minutes.*
4. *Pipet 10 µl Carrier RNA(1mg/ml) into the MagCore Sample Tubes.*
5. *Place the prepared Sample Tube into well 4 of T-rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code.201 program at MagCore®.*

# MagCore® Viral Nucleic Acid Extraction Kit

***For extraction of viral DNA/RNA from serum, plasma and cell-free body fluids***

## Cartridge Code 202

*Cat.No.MVN400-03 // MVN-400-04*

## Kit Contents

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MVN400-03 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 36 pcs. |
| Pipet Tip plus Holder Set | 36 sets. |
| Sample Tube | 36 pcs. |
| Elution Tube | 36 pcs. |
| Carrier RNA(1mg) | 1 pcs. |
| RNase Free Water | 1 pcs. |
| Proteinase K(11mg) | 1 pcs. |
| PK Storage Buffer | 1 pcs. |

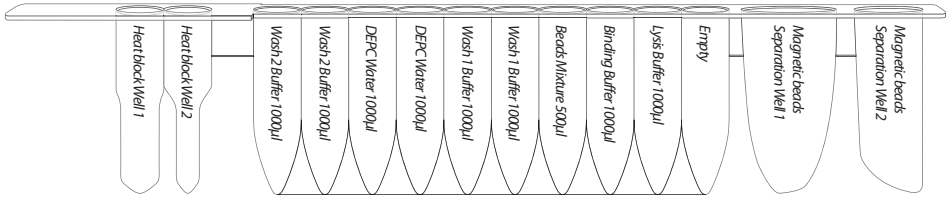
***Cat.No. MVN400-04 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| Carrier RNA(1mg) | 1 pcs. |
| RNase Free Water | 1 pcs. |
| Proteinase K(11mg) | 2 pcs. |
| PK Storage Buffer | 2 pcs. |

***Storage and Stability :***

1. This kit should be stored at room temperature.
2. Carrier RNA should be stored at -20°C when mixing with RNase Free Water.
3. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.
4. Shelf life 12 months.

***Cartridge Contents :***




## Description

*MagCore® Viral Nucleic Acid Extraction kit is designed to extract viral DNA and RNA via MagCore® auto-extraction instrument. With all the kit components of plastic consumables are DNase/RNase-Free pretreated, and individual processing track for each loaded samples, this system eliminates all possible cross contamination between samples. Built-in protocol with flexibility in sample source volumes, both DNA and RNA virus can be extracted using the same kit in a fast and economical way.*

## Applications

*Using magnetic-particle technology to purify viral nucleic acid from serum, plasma, or cell-free body fluids. The purified viral nucleic acid is suitable for highly sensitive and quantitative PCR. MagCore Viral Nucleic Acid Extraction Kit has been proven with HBV, HCV, HIV and influenza viruses for downstream applications.*





***Running Time:*** ***57 min*** *(sample volume :200 µl) //* ***66 min****(sample volume :400 µl)*

### Preparation before using

1. *Add 1.0 ml RNase Free Water to the Carrier RNA tube and mix by vortexing. Store prepared Carrier RNA (1mg/ml) at -20°C.*
2. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### Protocol

1. *Pipet 10 µl Carrier RNA(1mg/ml) and 20 µl proteinase K(10mg/ml) into the MagCore Sample Tubes.*
2. *Add 200 µl or 400 µl of serum, plasma, or cell-free body fluids into the prepared Sample Tube.*
3. *Place the prepared Sample Tube into well 4 of T-rack.*
4. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
5. *Run Code.202 program at MagCore®.*

### Urine Protocol

*Sample preparation*

1. *Harvest cells from up to 3.5 ml urine by centrifugation for 10 minutes at 3000 rpm and concentrate the sample to 400 ul*
2. *Add 5~10 ul ProteinaseK (10mg/ml) to the sample. Vortex for 5 seconds to mix sample.*
3. *Incubate at 56°C for 10 minutes until the sample lysate is clear. During incubation, invert the tube every 3 minutes.*
4. *Pipet 10 µl Carrier RNA(1mg/ml) into the MagCore Sample Tubes.*
5. *Place the prepared Sample Tube into well 4 of T-rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code 202 program at MagCore®.*

# MagCore® Viral Nucleic Acid Large Volume Extraction Kit (2.4 ml)

**For extraction of viral DNA/RNA from large volume (2.4 ml) serum, plasma and cell-free body fluids.**

## Cartridge Code 210

Cat.No.MVN2400

## Kit Contents

**Check that the following parts are included in addition to the main unit:**

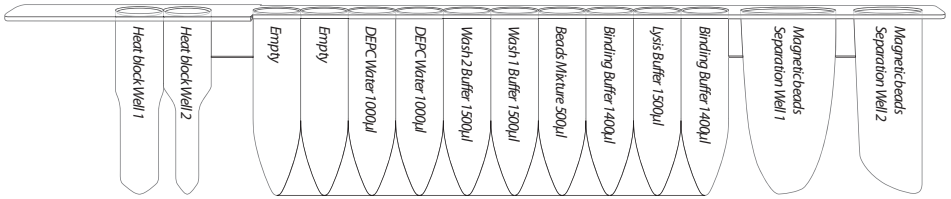
**Cat.No. MVN2400 Contents:**

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| 5ml Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| Carrier RNA(1mg) | 2 pcs. |
| RNase Free Water | 2 pcs. |
| Proteinase K(11mg) | 4 pcs. |
| PK Storage Buffer | 4 pcs. |

**Storage and Stability:**

1. This kit should be stored at room temperature.
2. Carrier RNA should be stored at -20℃ when mixing with RNase Free Water.
3. Proteinase K should be stored at -20℃ when mixing with PK Storage Buffer.
4. Shelf life 12 months.

**Cartridge Contents:**




## Description

*MagCore® Viral Nucleic Acid Large Volume Extraction Kit(2.4ml) is designed for purification of DNA and RNA from 2.4 ml serum, plasma, cell-free body fluids by MagCore® auto-extraction instrument. With all the kit components of plastic consumables are DNase/ RNase-Free pretreated, and individual processing track for each loaded samples, this system eliminates all possible cross contamination between samples. Built-in protocol with flexibility in sample source volumes, both DNA and RNA virus can be extracted using the same kit in a fast and economical way.*

## Applications

*Using magnetic-particle technology to purify viral nucleic acid from serum, plasma, or cell-free body fluids. The purified viral nucleic acid is suitable for highly sensitive and quantitative PCR. MagCore® Viral Nucleic Acid Large Volume Extraction Kit has been proven with HBV, HCV, HIV and influenza viruses for downstream applications.*





## Running Time: 90 min (sample volume :2400 µl)

### Preparation before using

1. Add 1.0 ml RNase Free Water to the Carrier RNA tube and mix by vortexing. Store prepared Carrier RNA (1mg/ml) at -20℃.
2. Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20℃.

### Protocol

1. Pipet 20 µl Carrier RNA(1mg/ml) and 40 µl proteinase K(10mg/ml) into the 5ml Sample Tubes(provided).
2. Add 2400 µl of serum, plasma, or cell-free body fluids into the prepared 5ml Sample Tube.
3. Place the prepared 5ml Sample Tube into well 4 of T-rack(for 5ml Sample Tube).
4. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
5. Run Code.210 program at MagCore®.

# MagCore® Viral Nucleic Acid Large Volume Extraction Kit (1.2 ml)

**For extraction of viral DNA/RNA from large volume (1.2 ml) serum, plasma and cell-free body fluids.**

## Cartridge Code 211

Cat.No.MVN1200

## Kit Contents

**Check that the following parts are included in addition to the main unit:**

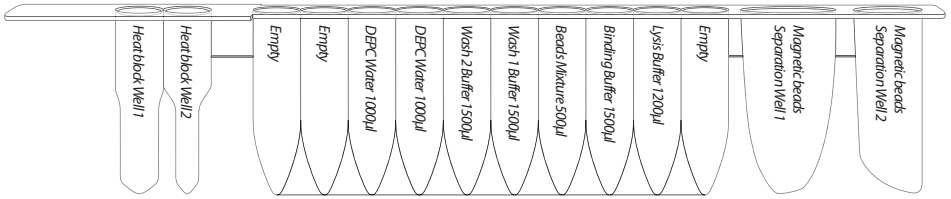
**Cat.No. MVN1200 Contents:**

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| Carrier RNA(1mg) | 1 pcs. |
| RNase Free Water | 1 pcs. |
| Proteinase K(11mg) | 2 pcs. |
| PK Storage Buffer | 2 pcs. |

**Storage and Stability :**

1. This kit should be stored at room temperature.
2. Carrier RNA should be stored at -20℃ when mixing with RNase Free Water.
3. Proteinase K should be stored at -20℃ when mixing with PK Storage Buffer.
4. Shelf life 12 months.

**Cartridge Contents :**




## Description

*MagCore® Viral Nucleic Acid Large Volume Extraction Kit(1.2ml) is designed for purification of DNA and RNA from 1.2 ml serum, plasma, cell-free body fluids by MagCore® auto-extraction instrument. With all the kit components of plastic consumables are DNase/ RNase-Free pretreated, and individual processing track for each loaded samples, this system eliminates all possible cross contamination between samples. Built-in protocol with flexibility in sample source volumes, both DNA and RNA virus can be extracted using the same kit in a fast and economical way.*

## Applications

*Using magnetic-particle technology to purify viral nucleic acid from serum, plasma, or cell-free body fluids. The purified viral nucleic acid is suitable for highly sensitive and quantitative PCR. MagCore® Viral Nucleic Acid Large Volume Extraction Kit has been proven with HBV, HCV, HIV and influenza viruses for downstream applications.*





## Running Time: 73 min (sample volume :1200 µl)

### Preparation before using

1. Add 1.0 ml RNase Free Water to the Carrier RNA tube and mix by vortexing. Store prepared Carrier RNA (1mg/ml) at -20℃.
2. Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20℃.

### Protocol

1. Pipet 10 µl Carrier RNA(1mg/ml) and 20 µl proteinase K(10mg/ml) into the MagCore Sample Tubes(provided).
2. Add 1200 µl of serum, plasma, or cell-free body fluids into the prepared Sample Tube.
3. Place the prepared Sample Tube into well 4 of T-rack.
4. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
5. Run Code.211 program at MagCore®.

# *MagCore® Genomic DNA Plant Kit*

***For extraction of genomic DNA from plant and fungal tissues.***

## *Cartridge Code 301*

*Cat.No.MGP-01 // MGP-02*

## *Kit Contents*

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MGP-01 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *36 pcs.* |
| *Pipet Tip plus Holder Set* | *36 sets.* |
| *Sample Tube* | *36 pcs.* |
| *Elution Tube* | *36 pcs.* |
| *Filter Column Set* | *36 pcs.* |
| *RNase A(10mg/ml, 275µl)* | *1 pcs.* |
| *GP1 Buffer(25ml)* | *1 pcs.* |
| *GP2 Buffer(6ml)* | *1 pcs.* |

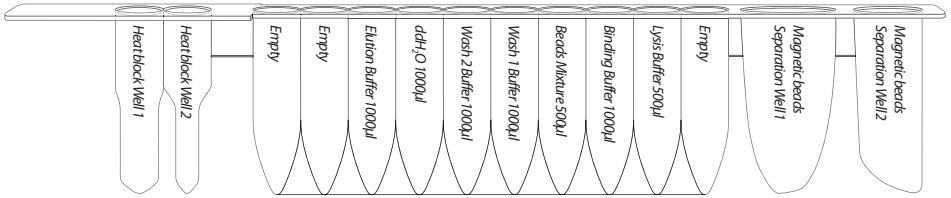
***Cat.No. MGP-02 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *96 pcs.* |
| *Pipet Tip plus Holder Set* | *100 sets.* |
| *Sample Tube* | *100 pcs.* |
| *Elution Tube* | *100 pcs.* |
| *Filter Column Set* | *100 pcs.* |
| *RNase A(10mg/ml, 550µl)* | *1 pcs.* |
| *GP1 Buffer(50ml)* | *1 pcs.* |
| *GP2 Buffer(15ml)* | *1 pcs.* |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. For long term storage, RNase A should be stored at 4℃.*
*3. Shelf life 12 months.*

***Cartridge Contents :***




## *Description*

*MagCore Genomic DNA Plant Kit is designed for purification of DNA from plant tissues and cells by using MagCore® auto-extraction instrument. The provided Filter Column Set can filtrate hard tissue sample and prevent tissue residues to obstruct pipette tip during the process of MagCore®. The kit contains all required reagent and labware for automated purification using magnetic-particle technology. Easy select program code number 301 in MagCore® and combine using kit can perform high quality genomic DNA.*

## *Applications*

*Using magnetic-particle technology to purify genomic DNA up to 100mg of fresh tissue. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, PCR, southern blotting, RADP / AFLP... etc.*





## *Running Time: 33min (sample volume: 400 µl)*

### *Preparation before using*

*The kit procedures are optimized for a maximum of 100 mg of wet-weight or 20 mg of dried starting material.*

*Exceeding the recommended maximum amount of starting material will result in inefficient lysis, resulting in low yield and purity.*

### *Tissue Dissociation Protocol*

1. *Cut 50 mg (up to 100 mg) of fresh or frozen plant tissue or 5 mg (up to 20 mg) of dried sample.*
2. *Grind the sample with mortar and pestle under liquid nitrogen to a fine powder. For some plant samples, liquid nitrogen may be unnecessary for homogenization.*
3. *Transfer it into a microcentrifuge tube (not provided).*

### *Lysis Step:*

1. *Add 400µl GP1 Buffer and 5µl RNase A (10mg/ml) into the microcentrifuge tube and mix by vortexing. Do not mix GP1 Buffer with RNase A before use.*
2. *Incubate at 65℃ for 10 minutes. During incubation, invert the tube every 5 minutes.*
3. *Add 100µl GP2 Buffer and mix by vortexing.*
4. *Incubate on ice for 3 minutes. Place a Filter Column into a 2 ml Collection Tube and apply the entire lysate from previous step to the Filter Column.*
5. *Centrifuge for 3 minutes at full speed (13,000 rpm).*
6. *Discard the Filter Column and carefully transfer clarified lysate(about 400µl) in the collection Tube to the MagCore Sample Tubes.*
7. *Place the prepared Sample Tube into well 4 of T-rack.*
8. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
9. *Run Code.301 program at MagCore®.*

### *Fungal Tissue Protocol*

#### *Sample preparation*

1. *Collect the fungal tissue up to 20 mg.*
2. *Grind the sample with mortar and pestle under liquid nitrogen to a fine powder.*
3. *Transfer it into a microcentrifuge tube (not provided). Do not allow the sample to thaw.*

#### *Cell Lysis*

1. *Add 400µl GP1 Buffer and 5µl RNase A (10mg/ml) into the microcentrifuge tube and mix by vortexing. Do not mix GP1 Buffer with RNase A before use.*
2. *Incubate at 65℃ for 10 minutes. During incubation, invert the tube every 5 minutes.*
3. *Add 100µl GP2 Buffer and mix by vortexing.*
4. *Incubate on ice for 3 minutes. Place a Filter Column into a 2 ml Collection Tube and apply the entire lysate from previous step to the Filter Column.*
5. *Centrifuge for 3 minutes at full speed (13,000 rpm).*
6. *Discard the Filter Column and carefully transfer clarified lysate(about 400µl) in the collection Tube to the MagCore Sample Tubes.*
7. *Place the prepared Sample Tube into well 4 of T-rack.*
8. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
9. *Run Code.301 program at MagCore®.*

# *MagCore® Genomic DNA Tissue Kit*

***For extraction of genomic DNA from a variety to animal tissues, paraffin-embedded tissue, swab, blood stain, forensic specimens and cultured yeast.***

## *Cartridge Code 401*

*Cat.No.MGT-01 // MGT-02*

## *Kit Contents*

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MGT-01 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *36 pcs.* |
| *Pipet Tip plus Holder Set* | *36 sets.* |
| *Sample Tube* | *36 pcs.* |
| *Elution Tube* | *36 pcs.* |
| *GT Buffer(30ml)* | *1 pcs.* |
| *Filter Column Set* | *36 pcs.* |
| *Proteinase K(11mg)* | *1 pcs.* |
| *PK Storage Buffer* | *1 pcs.* |

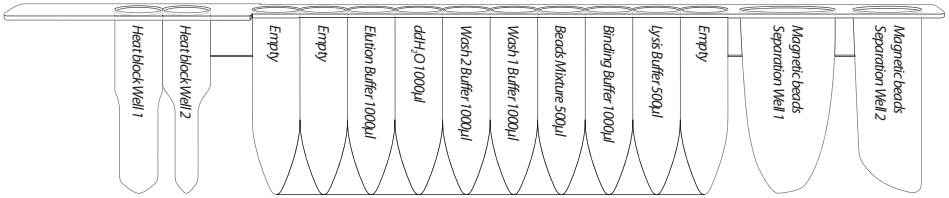
***Cat.No. MGT-02 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *96 pcs.* |
| *Pipet Tip plus Holder Set* | *100 sets.* |
| *Sample Tube* | *100 pcs.* |
| *Elution Tube* | *100 pcs.* |
| *GT Buffer(30ml)* | *2 pcs.* |
| *Filter Column Set* | *100 pcs.* |
| *Proteinase K(11mg)* | *2 pcs.* |
| *PK Storage Buffer* | *2 pcs.* |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*3. Shelf life 12 months.*

***Cartridge Contents :***




## *Description*

*MagCore® Genomic DNA Tissue Kit is designed for purification of total DNA (including genomic, mitochondrial and viral DNA) from a variety of animal tissues or cells by using MagCore® auto-extraction instrument. The provided Filter Column can filtrate hard tissue sample or swab sample to prevent tissue residues to obstruct pipette tip during the process of MagCore® . The method uses pre-filled cartridge contains proteinase K and a chaotropic salt to lysis cells and degrade protein. DNA will bind to cellulose coated magnetic beads . After washing off the contaminants, the purified DNA is eluted by low salt elution buffer. Purified DNA of approximately 20-30 kb in length is suitable for PCR or other enzymatic reactions.*

## *Applications*

*Using magnetic-particle technology to purify genomic DNA from animal tissues, paraffin embedded tissue, swab and blood stain. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting... etc.*





## *Running Time:* ***33 min*** *(sample volume :400 µl)*

### *Preparation before using*

1. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*

### *For Paraffin-Embedded Tissue*

#### *Sample Preparation:*

*Additional Requirements: Xylene(or Substitutes), Ethanol (96-100%), Microcentrifuge Tube.*

*Suggested Xylene Substitute: A5597(Sigma), Neo-Clear(Merck), CitriSolv(Fisher).*

1. *Slice small section (5-10µm) of paraffin-embedded tissue and transfer to a microcentrifuge tube.*
   *Discard the first 2-3 sections, if the surface of paraffin sample has been exposed to air.*
2. *Add 1ml xylene(or substitute) to the tube and vortex vigorously for 10sec. Then incubate at 60°C for 10min.*
3. *Centrifuge at full speed for 3min at room temperature.*
4. *Remove the supernatant carefully by pipetting, then add 1ml ethanol (96-100%) to the pellet and mix by vortexing for 10sec.*
5. *Centrifuge at full speed for 5min at room temperature.*
6. *Remove the supernatant carefully by pipetting, then add again of 1ml ethanol (96-100%) to the pellet and mix by vortexing for 10sec to wash again.*
7. *Centrifuge at full speed for 5min.*
8. *Remove residual ethanol with a fine pipette tip, then open the tube and incubate at 55°C for 5min until all residual ethanol has been evaporated.*
9. *Add 400µl GT Buffer and 20µl Proteinase K(10mg/ml) to the tube and mix by vortexing.*
10. *Incubate at 55°C for 90min until the sample has been completely lysed.*
11. *If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.*
12. *Pipette 400µl of clear tissue solution to the MagCore Sample Tube.*
13. *Place the prepared Sample Tube into well 4 of T-rack.*
14. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
15. *Run Code.401 program at MagCore®.*

### *For Swab Sample*

*Additional Requirements: PBS, Microcentrifuge Tube.*

1. *Separate the swab cotton form the stick. Place the swab into a 2ml microcentrifuge tube, add 500µl or more of GT Buffer and 20µl Proteinase K(10mg/ml).*
2. *Incubate the sample lyaste at 55°C for 30min.*
   *For Buccal Swab sample, donor should not ingest anything for at least 30min prior to sample collection.*
3. *If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.*
4. *Pipette 400µl of clear tissue solution to the MagCore Sample Tube.*
5. *Place the prepared Sample Tube into well 4 of T-rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code.401 program at MagCore®.*

## For Solid Animal Tissue

Additional Requirements: Microcentrifuge Tube.

1. Cut the solid tissue to small pieces and put into a microcentrifuge tube.
2. Add 400µl GT Buffer and 20µl Proteinase K(10mg/ml) to the tube and mix by vortexing.
3. Incubate at 55℃ for 90min until the sample has been completely lysed.
4. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
5. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
6. Place the prepared Sample Tube into well 4 of T-rack.
7. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
8. Run Code.401 program at MagCore®.

## For Stool Sample

Additional Requirements: Microcentrifuge Tube.

1. Weight 180-200mg stool in a 2ml microcentrifuge tube and place on ice. If the sample is liquid, pipet 200µl into microcentrifuge tube. Cut the end of pipet tip to make pipetting easier. If the sample is frozen, use a scalpel or spatula to scrape bits of stool into microcentrifuge tube on ice.
2. Add 1.5ml GT Buffer to sample. Vortex continuously for 1 min or until the stool sample is thoroughly homogenized. This is very important to vortex sample thoroughly to ensure maximum DNA concentration in the final elutes.
3. Incubate the suspension for 5 min at 70℃. This step can increase DNA recovery 3-5 fold, if the sample target is Gram-positive bacteria, please increase to 95℃ for cells lysis.
4. Vortex for 15 seconds and centrifuge sample at full speed (13,000rpm) for 1 min to pellet stool particles.
5. Pipet 400µl of the supernatant into a new 1.5ml microcentrifuge tube.
6. Add 20µl Proteinase K (10mg/ml) to the sample mixture and vortex to mix. Incubate at 60℃ for 2~3 hours to lyse the sample.
7. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
8. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
9. Place the prepared Sample Tube into well 4 of T-rack.
10. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
11. Run Code.401 program at MagCore®.

## For Feed-soil Sample

1. Apply 30~40mg feed or soil samples into a 1.5 ml microcentrifuge tube.
2. Add 20µl (10mg/ml) Proteinase K and followed by adding 500µl of GT Buffer. Vortex gently until the powder suspend in GT buffer.
3. Incubate the mixture at 56℃ for 15mins. Invert the tube every 2~3mins during incubation.
   Typically 15mins incubation can lysis more than 90% cells . Extend incubation time to 20mins can increase 10% of yield.
4. Centrifuge the mixture for 3 min at full speed.
5. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
6. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
7. Place the prepared Sample Tube into well 4 of T-rack.
8. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
9. Run Code.401 program at MagCore®.

## For Dried Blood Spot

1. Cut 3mm diameter punches from a dried blood spot with a single-hole paper punch. Place up to 3 blood card into a 1.5ml microcentrifuge tube.
2. Add 400~500µl GT buffer into the microcentrifuge tube and continue to homogenize the sample tissue with grinding.
3. Add 20µl Proteinase K (10mg/ml) to the sample mixture and vortex to mix. Incubate at 60℃ for 1 hour to lyse the sample.
4. Pipette 400µl of sample mixture to the MagCore Sample Tube.
5. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
6. Place the prepared Sample Tube into well 4 of T-rack.
7. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
8. Run Code.401 program at MagCore®.

## Optional Step: RNA Degradation

If RNA-Free genomic DNA is required, perform these optional steps before adding Proteinase K.

1. Add 4µl RNase A(not provided, 50mg/ml) into the sample lysate.
2. Incubate the sample at room temperature for 20min.

## Cigarette Butts Protocol

### Sample preparation

1. Cut 1 $cm^2$ piece of outer paper from the end of the cigarette or filter. Cut this piece into 6 smaller pieces. Transfer the pieces to a 1.5 ml microcentrifuge tube.

### Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1 hour to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
4. Place the prepared Sample Tube into well 4 of T-rack.
5. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
6. Run Code.401 program at MagCore®.

## Hair roots Protocol

### Sample preparation

1. Cut the hair roots into 0.5–1 cm pieces, and transfer them to the 1.5 ml microcentrifuge tube.

### Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1 hour to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
4. Place the prepared Sample Tube into well 4 of T-rack.
5. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
6. Run Code.401 program at MagCore®.



## Chewing Gum Protocol

### Sample preparation

1. Cut up to 30 mg of chewing gum into small pieces and transfer them to a 1.5 ml microcentrifuge tube.

### Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1~3 hours to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
4. Place the prepared Sample Tube into well 4 of T-rack.
5. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
6. Run Code.401 program at MagCore®.

## Betel Nut Residue Protocol

### Sample preparation

1. Cut up to 30 mg of betel nut residue into small pieces and transfer them to a 1.5 ml microcentrifuge tube.

### Cell Lysis

1. Add 500µl GT buffer and 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 60℃ for 1~3 hours to lyse the sample.
2. Briefly centrifuge the tube to remove drops from the inside of the lid.
3. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
4. Place the prepared Sample Tube into well 4 of T-rack.
5. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
6. Run Code.401 program at MagCore®.

## Saliva Protocol

### Sample preparation

1. For saliva sample, donor should not ingest anything for at least 30min prior to sample collection.
2. Prepare PBS Buffer and 15 ml tube.

### Cell Lysis

1. Apply the 1 ml saliva and add 4 ml PBS buffer (not provided).
2. Centrifuge at 1800 x g for 5 min, and then carefully discard the supernatant.
3. Resuspend the pellet in 400µl GT buffer.
4. Add 20µl Proteinase K, close the lid, and mix for 10 sec. Incubate at 70°C for 10 minutes to lyse the sample.
5. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5min to get clear tissue solution in the Collection Tube.
6. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
7. Place the prepared Sample Tube into well 4 of T-rack.
8. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
9. Run Code.401 program at MagCore®.



## Cultured Yeast Protocol

- **Additional requirements:** Sorbitol Buffer, Lyticase or Zymolase, Microcentrifuge tube.
- **Preparation of Sorbitol Buffer:** 1.2 M sorbitol, 10mM CaCl2, 0.1M Tris-Cl pH 7.5. Sterilize by filtration and store at 4°C

### Sample preparation

1. Harvest 3ml yeast cells (up to $5x10^7$ cells) by centrifugation at 5000 x g for 10 minutes. Discard the supernatant and carefully remove any remaining media by aspiration.
2. Resuspend the cell pellet in 600µl sorbitol buffer (not provided).

### Cell Lysis

1. Add 200U Lyticase or Zymolase (not provided). Incubate at 30°C for 30 minutes. Centrifuge the mixture for 10 min at 2,000 x g to harvest Spheroplast.
2. Remove the supernatant and add 400µl of GT Buffer to the tube and vortex or pipette to resuspend the cell pellet.
3. Incubate at 55°C for 90min until the sample has been completely lysed.
4. If there are any insoluble residues in the tube, transfer the supernatant to Filter Column and centrifuge at full speed for 5 min to get clear tissue solution in the collection tube.
5. Pipette 400µl of clear tissue solution to the MagCore Sample Tube.
6. Place the Sample Tube into well 4 of T-rack.
7. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
8. Run Code.401 program at MagCore®.

# MagCore® Genomic DNA FFPE One-Step Kit

***For extraction of total DNA from formalin-fixed paraffin-embedded (FFPE) tissue by using MagCore® System.***

## Cartridge Code 405

*Cat. No. MGF-01 // MGF-03*

## Kit Contents

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MGF-01 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 36 pcs. |
| Pipet Tip plus Holder Set | 72sets. |
| Elution Tube | 36 pcs. |
| Sula Oil | 25 ml |
| Proteinase K(11mg) | 1 pcs. |
| PK Storage Buffer | 1 pcs. |
| Thermostable cap | 36 pcs. |

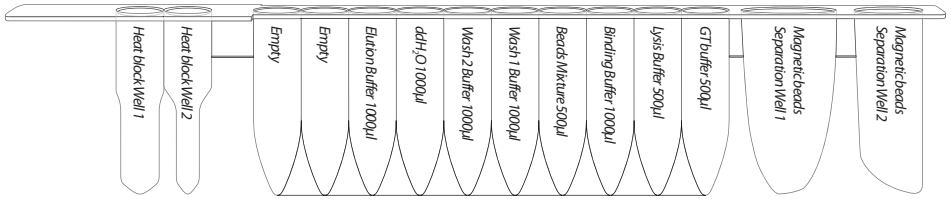
***Cat.No. MGF-03 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 72 pcs. |
| Pipet Tip plus Holder Set | 150 sets. |
| Elution Tube | 75 pcs. |
| Sula Oil | 50 ml |
| Proteinase K(11mg) | 2 pcs. |
| PK Storage Buffer | 2 pcs. |
| Thermostable cap | 75 pcs. |

***Storage and Stability :vvv***

1. This kit should be stored at room temperature.
2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.
3. Shelf life 12 months.

***Cartridge Contents :***




## Description

*MagCore® Genomic DNA FFPE One-Step Kit is designed for purification of total DNA from FFPE tissues by using MagCore® instruments. It features the method, One-Step Heating, to melt paraffin and lyse tissue samples at the same time without harmful reagents involved such as xylene. Two protocols are designed and optimized for different sizes of tissues: 2 hrs for small samples/ 16 hrs for large samples (Please see "important notes"). DNA will be extracted fast and economically based on the cellulose coated magnetic bead technology.*

## Applications

*Use magnetic-particle technology to purify genomic DNA from FFPE tissue. The purified genomic DNA can be directly used for downstream application such as PCR, real-time PCR, restriction enzyme digestion, southern blotting…etc.*





***Running Time:*** ***175 min****(2-hour heating) -Standard //* ***1012 min****(16-hour heating)-High Yield*

### Preparation before using

1. *Add 1.1 ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10 mg/ml) at -20°C.*

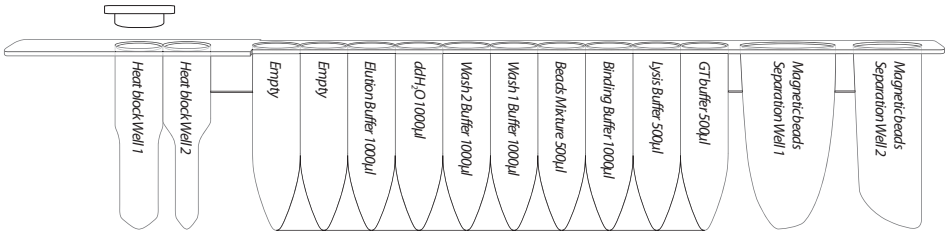
### For needle-like FFPE tissue slices

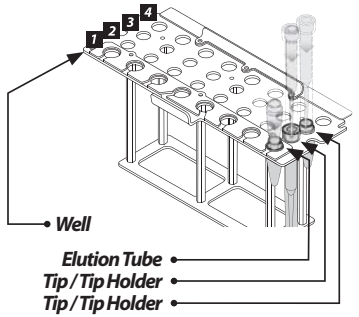
1. *Add 500 µl Sula Oil, 20 µl PK and the FFPE tissue sample to the bottom of* ***Heat Block well 1*** *of cartridge, and then cover it up with the Thermostable cap.*

   ***Note: If the tissue is too large to lyse (the surface area over 300 mm$^2$) , cut it in 4 sections (Please see "important notes step 3") before adding in the heat block well 1 would be suggested. Make sure the tissue is at the bottom of the well to avoid clipping it by Thermostable cap.***
2. *Place the Elution Tube into* ***well 1*** *and the Tip Plus Holder Set into* ***well 2 and 3*** *of T-Rack.*
3. *Run Code 405 program at MagCore®.*

### For glass-slide samples

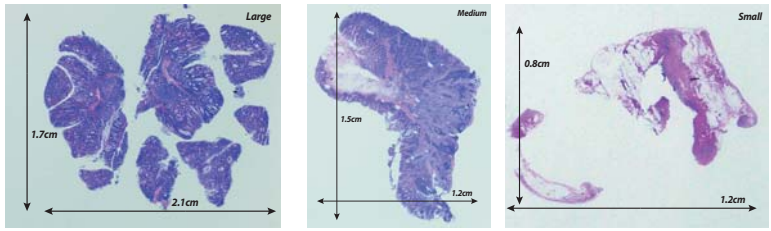
1. *Drop several Sula Oil on the glass slide and scrape them from the slide carefully, then put in the bottom of* ***Heat Block well 1****.*
2. *Add 500 µl Sula Oil and 20 µl PK into* ***Heat Block well 1****, rinse remaining sample on the wall and blade, then cover it up with the Thermostable cap.*
3. *Place the Elution Tube into well 1, the Tip Plus Holder Set into* ***well 2 and 3*** *of T-Rack.*
4. *Run Code 405 program at MagCore®.*



## Important Notes

1. The surface area of the FFPE tissue sample could be measured as following examples:




2. Sample amount of preparation can be 1-5 scrolls, each with a thickness up to 5μm. One FFPE scroll could be enough to analyze if the surface area is over 200 $mm^2$.

| Surface area ($mm^2$) | Sample scroll |
|---|---|
| 200 ↑ | 1 |
| 100-200 | 1-2 |
| 50-100 | 2-3 |
| 50 ↓ | 3-5<br>(do not over Sula Oil's capacity: 20mg) |

*Overload the sample or paraffin will clog the tip and decrease the yield.

3. If the tissue sample is over 300 $mm^2$, we recommend cutting it into 4 sections as following examples:

4. If you have no information about the sample, we recommend starting with no more than 1 scroll and cutting it into 4 sections per preparation.
5. Sula Oil is a deparaffin buffer. The capacity of the Sula Oil (500 μl) is about 20 mg paraffin per preparation.
6. In MagCore 405 program, two different lyse time are provided: 2hr and 16hr.

## Recommend

1. Both 2hr and 16hr program can extract DNA from FFPE sample.
   Choose 2hr program for saving time; choose 16hr for higher yield.
2. If you want to increase DNA yield, an overnight incubation(16hr program) can be performed, but it may result in greater DNA fragmentation.

## Troubleshooting

| Symptoms | Comments and suggestions |
|---|---|
| Low or NO DNA product | 1. The sample was lysed insufficiently. Make sure the proteinase K was stored at -20 °C, and repeat the procedure using fresh PK.<br>2. The sample was too large to lyse completely. The large FFPE tissue was suggested cutting into 4 sections, and one scroll was enough for extraction. Clogging tip will affect the extraction process. |
| Poor RCR results | 1. Poor quality FFPE samples. Fixation condition can affect PCR performance, such as long-time storage in fixative.<br>2. DNA fragments. DNA purified from FFPE samples may be fragmented due to formalin fixation, so we suggest keeping amplicons as short as possible for PCR. |
| Clogging tip or liquid up to the tip filter | 1. The sample was too large to pipetting. Large tissue clogged the tip would result the liquid up to the tip filter or the extraction cannot finish. We suggest cutting the tissue before adding in the Heat Block well 1.<br>2. The sample was too much to pipetting. Do not extract too much scrolls at a time. For large tissue, one scroll is enough for extraction; for small tissue, we suggest not over 20mg of FFPE. |

# MagCore® Genomic DNA Bacterial Kit

***For extraction of genomic DNA from bacteria.***

## Cartridge Code 502

*Cat.No.MBB-01 // MBB-02*

## Kit Contents

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MBB-01 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 36 pcs. |
| Pipet Tip plus Holder Set | 36 sets. |
| Sample Tube | 36 pcs. |
| Elution Tube | 36 pcs. |
| Lysozyme Reaction Buffer(15ml) | 1 pcs. |
| Proteinase K(11mg) | 2 pcs. |
| PK Storage Buffer | 2 pcs. |
| RNase A(50mg/ml, 160µl) | 1 pcs. |

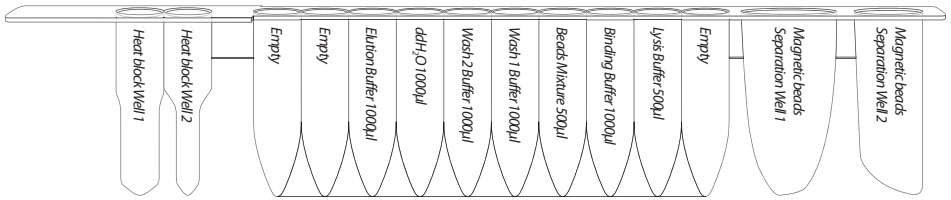
***Cat.No. MBB-02 Contents:***

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| Lysozyme Reaction Buffer(30ml) | 1 pcs. |
| Proteinase K(11mg) | 4 pcs. |
| PK Storage Buffer | 4 pcs. |
| RNase A(50mg/ml, 400µl) | 1 pcs. |

***Storage and Stability:***

*1. This kit should be stored at room temperature.*
*2. Proteinase K should be stored at -20°C when mixing with PK Storage Buffer.*
*3. For long term storage, RNase A should be stored at 4°C.*
*4. Shelf life 12 months.*

***Cartridge Contents :***




## Description

*MagCore® Genomic DNA Bacterial kit is designed to extract genomic DNA from both Gram+ and Gram- bacteria via MagCore® auto-extraction instrument. The kit contains all required reagent and labware for automated purification using magnetic-particle technology. Easy select program code number 502 in MagCore® and combine using MagCore® Genomic DNA Bacterial Kit can extract high quality genomic DNA.*

## Applications

*Using magnetic-particle technology to purify genomic DNA from both Gram+ and Gram- bacteria. The purified genomic DNA can be directly used for downstream application such as quantitative PCR, restriction enzyme digestion, southern blotting... etc.*





## Running Time: 44min *(sample volume :200 µl)*

### Preparation before using

1. *Add 1.1ml PK Storage Buffer to the Proteinase K tube and mix by vortexing. Store prepared Proteinase K (10mg/ml) at -20°C.*
2. *Freshly prepared 20mg/ml Lysozyme solution ( not provided) with Lysozyme Reaction Buffer before use.*

### For Sputum Specimens

#### Specimens Decontamination

1. *Fresh prepare 0.5% NALC in 2% NaOH, 1.5% Na-Citrate solution.*
   *(Ex: 0.25g NALC in 50mL NALC-NaOH solution)*
2. *Mix 10mL specimen with 10mL NALC-NaOH sol'n, RT°C for 15 min.*
3. *Add 25mL PBS, mix and centrifuge 3000 x g for 15 min.*
4. *Discard supernatant, resuspend pellet with 200µl Lysozyme solution and transfer to the MagCore Sample Tube.*
5. *Incubate for at least 30min at 37°C. During incubation, vortex the tube every 5min.*

#### Cell Lysis

1. *Add 4µl RNase A(50mg/ml) to sample mixture(including any precipitate) and vortex to mix sample.*
2. *Incubate at room temperature for 10min.*
3. *Resuspend sample mixture by pipetting.*
4. *Adding 40µl Proteinase K(10mg/ml) to sample mixture and vortex to mix sample.*
5. *Place the prepared Sample Tube into well 4 of T-rack.*
6. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
7. *Run Code.502 program at MagCore®.*

### General Protocol

1. *Harvest bacteria(maximum 2 x $10^9$ cells) into the MagCore Sample Tube by centrifuging at 5000 x g(8000rpm) for 3min. Discard supernatant.*
2. *Resuspend bacterial pellet in 200µl Lysozyme solution by vortexing or pipetting.*
3. *Incubate for at least 30min at 37°C. During incubation, vortex the tube every 5min.*
4. *Add 4µl RNase A(50mg/ml) to sample mixture(including any precipitate) and vortex to mix sample.*
5. *Incubate at room temperature for 10min.*
6. *Resuspend sample mixture by pipetting.*
7. *Adding 40µl Proteinase K(10mg/ml) to sample mixture and vortex to mix sample.*
8. *Place the prepared Sample Tube into well 4 of T-rack.*
9. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
10. *Run Code.502 program at MagCore®.*

# *MagCore® Total RNA Whole Blood Kit*

***For total RNA extraction from human whole blood.***

## *Cartridge Code 601*

*Cat.No.MRN-01 // MRN-02*

## *Kit Contents*

***Check that the following parts are included in addition to the main unit:***

***Cat.No. MRN-01 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *36 pcs.* |
| *Pipet Tip plus Holder Set* | *36 sets.* |
| *Sample Tube* | *36 pcs.* |
| *Elution Tube* | *36 pcs.* |
| *RBC Lysis Buffer(100ml)* | *1 pcs.* |
| *RB Buffer(15ml)* | *1 pcs.* |

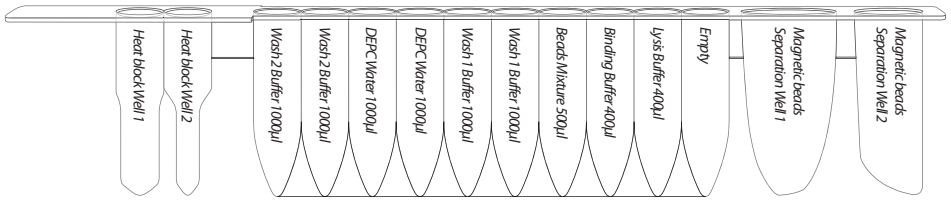
***Cat.No. MRN-02 Contents:***

| | |
|---|---|
| *Pre-filled Cartridge Reagent* | *96 pcs.* |
| *Pipet Tip plus Holder Set* | *100 sets.* |
| *Sample Tube* | *100 pcs.* |
| *Elution Tube* | *100 pcs.* |
| *RBC Lysis Buffer(200ml)* | *1 pcs.* |
| *RB Buffer(30ml)* | *1 pcs.* |

***Storage and Stability :***

*1. This kit should be stored at room temperature.*
*2. Shelf life 12 months.*

***Cartridge Contents :***




## *Description*

*MagCore® Total RNA Whole Blood Kit is specially designed for total RNA purification from up to 400µl human whole blood by using MagCore® auto-extraction instrument. The program provides optional protocol for contaminated genomic DNA remove. Combine RBC high quality RNase-free DNase I with MagCore® Total RNA Whole Blood Kit can provide high quality DNA-free total RNA.*

## *Applications*

*Using magnetic-particle technology to purify total RNA. The purified RNA can be directly used for downstream application such as real-time PCR, RT-PCR, cDNA synthesis... etc.*





***Running Time:*** ***42min*** *(without DNase I treatment ; starting volume: 200 µl)*
***68min*** *(with DNase I treatment ; starting volume: 200 µl)*

## *Preparation before using*

1. *β-Mercaptoethanol (β-ME; not provided) must be added to RB Buffer before use. Add 10µl of β-ME per 1 ml of RB Buffer.*
2. *Recommended Step: DNA residue degradation. Prepare DNase I (RNase-free) working solution according to the table below. Add 10µl DNase I with 190µl DNase reaction buffer (1X) in the 1.5 ml screw tube (not provided) and place it into well 3 of T-Rack.*

| *Healthy Whole blood* | *DNase I* | *DNase buffer 1X* |
|---|---|---|
| *Up to 400 µl* | *10 µl* | *190 µl* |

3. *RNase-free DNase I is not including in MagCore total RNA Whole Blood Kit, we recommend to use RBC RNase-free DNase I (Cat#DN036 or Cat#DN096) for genomic DNA treatment. For product information, please contact RBC Bioscience distributor. We also recommend to use RNase-free DNase I enzyme(1U/µl) of Novagen (Cat#69182-3). Please contact local Merck branch office or distributor for product information. 1X DNase Buffer can be prepared as following:*

***1X DNase I reaction buffer***

*10 mM Tris, pH7.6 ; 2.5 mM $MgCl_2$; 0.1 mM $CaCl_2$; in DEPC water, autoclave.*

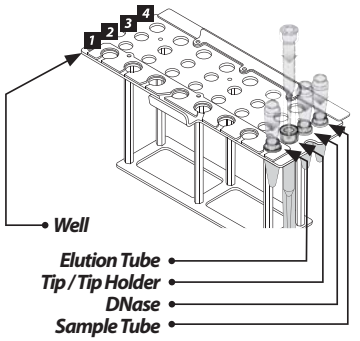
## *Fresh Whole Blood Protocol*

### *Without DNase I treatment*

1. *Add 1 volume of human whole blood with 3 volumes of RBC lysis Buffer in an appropriately sized tube (not provided) and mix by inversion. Do not vortex.( For example, add 1200µl of RBC lysis Buffer to 400µl of whole blood.)*
2. *Incubate the tube for 10 minutes on ice and invert 2~3 times during incubation.*
3. *Centrifuge for 3 minutes at 500 x g (2,500rpm) at 4℃ and completely discard the supernatant.*
4. *Add 500µl RBC lysis Buffer to the cell pellet. Resuspend cells by vortex briefly.*
5. *Transfer the suspended cells to the MagCore Sample Tube.*
6. *Centrifuge for 3 minutes at 500 x g (2,500rpm) at 4 ℃ and completely discard the supernatant.*
7. *Add 200µl RB buffer (contain β-ME) to the white pellet and mix by vortexing. (can storage up to 1 month at -80℃)*
8. *Place the prepared Sample Tube into well 4 of T-rack.*
9. *Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.*
10. *Run Code.601 program at MagCore® and select Remove Genomic DNA (2)NO.*

### *With DNase I treatment*

1. *Follow step 1~9 of without DNase I treatnent protocol to prepare whole blood cell sample.*
2. *Be sure to place the 200µl DNase I mixture (in 1.5 ml screw tube) into the well 3 of T-Rack.*
3. *Run Code.601 program at MagCore® and select Remove Genomic DNA (1)YES.*



# MagCore® Total RNA Cultured Cells Kit

**For total RNA extraction from cultured cells.**

## Cartridge Code 610

Cat.No.MRC-01 // MRC-02

* For isolation of total RNA from animal tissues and FFPE samples, the MagCore total RNA Cultured Cells Kit is a relatively suitable choice and functions with a special protocol. In the near future, a more unique and convenient reagent will be developed for the extraction of RNA from animal tissue and FFPE samples.

## Kit Contents

**Check that the following parts are included in addition to the main unit:**

**Cat.No. MRC-01 Contents:**

| | |
|---|---|
| Pre-filled Cartridge Reagent | 36 pcs. |
| Pipet Tip plus Holder Set | 36 sets. |
| Sample Tube | 36 pcs. |
| Elution Tube | 36 pcs. |
| RB Buffer(15ml) | 1 pcs. |

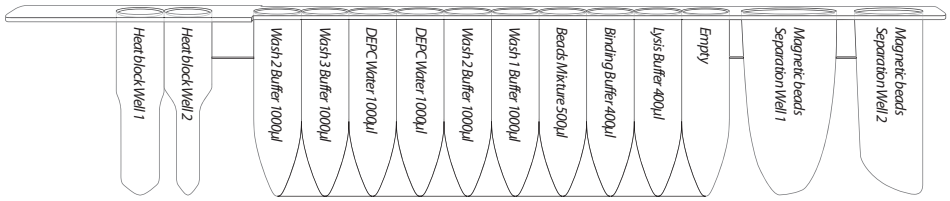
**Cat.No. MRC-02 Contents:**

| | |
|---|---|
| Pre-filled Cartridge Reagent | 96 pcs. |
| Pipet Tip plus Holder Set | 100 sets. |
| Sample Tube | 100 pcs. |
| Elution Tube | 100 pcs. |
| RB Buffer(30ml) | 1 pcs. |

**Storage and Stability :**

1. This kit should be stored at room temperature.
2. Shelf life 12 months.

**Cartridge Contents :**

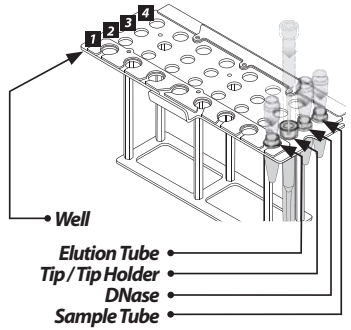



## Description

MagCore® Total RNA Cultured Cells Kit is specially designed for total RNA purification from up to 1x106 cultured cells by using MagCore® auto-extraction instrument.The program provides optional protocol for contaminated genomic DNA remove. Combine RBC high quality RNase-free DNase I with MagCore® Total RNA Cultured Cells Kit can provide high quality DNA-free total RNA.

## Applications

Using magnetic-particle technology to purify total RNA. The purified RNA can be directly used for downstream application such as real-time PCR, RT-PCR, cDNA synthesis... etc.








**Running Time:** **42min** (without DNase I treatment; starting volume:200 µl)

**73min** (with DNase I treatment; starting volume:200 µl)

## Preparation before using

1. β-Mercaptoethanol (β-ME; not provided) must be added to RB Buffer before use. Add 10µl of β-ME per 1 ml of RB Buffer.
2. Recommended Step: DNA residue degradation. Prepare DNase I (RNase-free) working solution according to the table below. Add 10µl DNase I with 190µl DNase reaction buffer (1X) in the 1.5 ml screw tube (not provided) and place it into well 3 of T-Rack.

| Cultured Cells | DNase I | 1X DNase Buffer |
|---|---|---|
| Up to $1x10^6$ | 10 µl | 190 µl |

3. RNase-free DNase I is not including in MagCore total RNA Cultured Cells Kit, we recommend to use RBC RNase-free DNase I (Cat#DN036 or Cat#DN096) for genomic DNA treatment. For product information, please contact RBC Bioscience distributor. We also recommend to use RNase-free DNase I enzyme(1U/µl) of Novagen (Cat#69182-3). Please contact local Merck branch office or distributor for product information. 1X DNase Buffer can be prepared as following:

   **1X DNase I reaction buffer**

   10 mM Tris, pH7.6 ; 2.5 mM $MgCl_2$ ; 0.1 mM $CaCl_2$ ; in DEPC water, autoclave.

## Cultured Cells Protocol

**Sample Preparation**

**A. Cells grown in suspension**

Cells grown in suspension(up to 1 x $10^6$ cells). Determine the number of cells. Transfer appropriate number of cells to the MagCore Sample Tube(provided) and centrifuge for 5 min. at 300 x g. Remove the supernatant completely and discard, Continue with MagCore® Operation step.

**B. Cells grown in a monolayer**

Cells grown in a monolayer(up to 1 x $10^6$ cells). Cells grown in a monolayer can be detached from the culture flask by either trypsinization or using a cell scraper.

**To trypsinize cells:**

Determine the number of cells. Aspirate the medium and wash cells with PBS (not provided). Aspirate the PBS, and add 0.10–0.25% trypsin. After cells have detached from the dish or flask, collect them in medium, and transfer the appropriate number of cells(up to 1 x $10^6$ cells) to the MagCore Sample Tube(provided). Centrifuge for 5 min. at 300 x g. Remove the supernatant completely and discard, taking care not to disturb the cell pellet. Continue with MagCore® Operation step.

**Using a cell scraper:**

Detach cells from the dish or flask. Transfer the appropriate number of cells(up to 1 x $10^6$ cells) to the MagCore Sample Tube(provided) and centrifuge for 5 min. at 300 x g. Remove the supernatant completely and discard, taking care not to disturb the cell pellet. Continue with MagCore® Operation step.

## MagCore Operation

**Without DNase I treatment**

1. Add 200µl RB buffer (contain β-ME) to the cells pellet and mix by vortexing ( can storage up to 1 month at -80℃ ).
2. Place the prepared Sample Tube into well 4 of T-rack.
3. Put the Elution Tube into well 1 of T-Rack and the Tip Plus Holder Set into well 2 of T-Rack.
4. Run Code.610 program at MagCore® and select Remove Genomic DNA (2)NO.

**With DNase I treatment**

1. Follow step 1~3 of without DNase I treatnent protocol to prepare culture cell sample.
2. Be sure to place the 200µl DNase I mixture (in 1.5 ml screw tube) into the well 3 of T-Rack.
3. Run Code.610 program at MagCore® and select Remove Genomic DNA (1)YES.

# Running Time List

| Cat. Number | Product | Reactions | Code No. | Running Time |
|---|---|---|---|---|
| MGB400-01 | MagCore® Genomic DNA Whole Blood Kit (Speedy Installation) | 36 | 101 | 44 min (sample volume :200 µl)<br>57 min (sample volume :400 µl) |
| MGB400-02 | | 96 | | |
| MGB400-03 | MagCore® Genomic DNA Whole Blood Kit | 36 | 102 | 44 min (sample volume :200 µl)<br>55 min (sample volume :400 µl) |
| MGB400-04 | | 96 | | |
| MGB1200 | MagCore® Genomic DNA Large Volume Whole Blood Kit | 96 | 104 | 76 min (sample volume :1200 µl) |
| MPD1200 | MagCore® Plasma DNA Extraction Kit | 96 | 105 | 76 min (sample volume :1200 µl) |
| MCC-01 | MagCore® Cultured cells DNA Kit | 36 | 110 | 44 min (sample volume: 200 µl, up to 5 x $10^6$ cells) |
| MCC-02 | | 96 | | |
| MVN400-01 | MagCore® Viral Nucleic Acid Extraction Kit | 36 | 201 | 45 min (sample volume :200 µl)<br>56 min (sample volume :400 µl) |
| MVN400-02 | | 96 | | |
| MVN400-03 | MagCore® Viral Nucleic Acid Extraction Kit | 36 | 202 | 57 min (sample volume :200 µl)<br>66 min (sample volume :400 µl) |
| MVN400-04 | | 96 | | |
| MVN2400 | MagCore® Viral Nucleic Acid Extraction Kit (2.4ml) | 96 | 210 | 90 min (sample volume :2400 µl) |
| MVN1200 | MagCore® Viral Nucleic Acid Extraction Kit (1.2ml) | 96 | 211 | 73 min (sample volume :1200 µl) |
| MGP-01 | MagCore® Genomic DNA Plant Kit | 36 | 301 | 33 min (sample volume :400 µl) |
| MGP-02 | | 96 | | |
| MGT-01 | MagCore® Genomic DNA Tissue Kit | 36 | 401 | 33 min (sample volume :400 µl) |
| MGT-02 | | 96 | | |
| MBB-01 | MagCore® Genomic DNA Bacterial Kit | 36 | 502 | 44 min (sample volume :200 µl) |
| MBB-02 | | 96 | | |
| MRN-01 | MagCore® Total RNA Whole Blood Kit | 36 | 601 | 42min (without DNase I treatment)<br>68min (with DNase I treatment )<br>(sample volume :200 µl) |
| MRN-02 | | 96 | | |
| MRC-01 | MagCore® Total RNA Cultured cells Kit | 36 | 610 | 42min (without DNase I treatment)<br>73 min (with DNase I treatment)<br>(sample volume :200 µl) |
| MRC-02 | | 96 | | |

# Ordering information

| Product | Contents | Cat. No. |
|---|---|---|
| **Accessories of HF16** | | |
| Cartridge Rack | | MRC001 |
| T-Rack | For general using | MRC002 |
| T-Rack (5 ml sample tube) | For MVN2400 | MRC003 |
| **Reagent** | | |
| Proteinase K Set | 11 mg Proteinase K,<br>1.25 ml PK Storage Buffer | PK011 |
| RNase A (50 µl) | 50 µl RNase A (50mg/ml) | RN050 |
| RNase A (130 µl) | 130 µl RNase A (50mg/ml) | RN130 |
| Lysozyme (20 mg) | 20 mg | YLY20 |
| Lysozyme (250 mg) | 250 mg | YLY250 |
| DNase I Set | RNase-Free DNase I (Lyophilized):1500 Kunitz units x 1 vial, 1 ml RNase-Free Water x1,<br>15 ml DNase I Reaction Buffe | DN036 |
| | RNase-Free DNase I (Lyophilized):1500 Kunitz units x 2 vial, 1 ml RNase-Free Water x2,<br>30 ml DNase I Reaction Buffer | DN096 |

# Note



Note